


SEG/EAGE

Summer Research Workshop

Velocity Model Building in Complex Geology

Charleston, SC
13–17 August 2012
Charleston Place Hotel



Society of Exploration Geophysicists
The international society of applied geophysics

Monday, 13 August

16:30 Registration
18–20 Opening Reception/Icebreaker

Tuesday, 14 August

Morning Session — Ray Based Tomography 1

8:20 Opening Remarks
8:30–9 **Seismic Numerical Forward Modeling: Rays and Waves**, Jean Virieux (University Joseph Fourier Grenoble I & CNRS)
9–9:20 **Reflection Tomography: Failures of Conventional Wisdom**, John Etgen (BP)
9:20–9:40 **Structurally Conformable Velocity Models with High Definition Tomography**, Jean-Phillippe Montel (CGGVeritas)
9:40–10:10 Break
10:10–10:30 **Velocity Model Building in Complex Media by Multi-layer Non-linear Slope Tomography**, Jean-Phillippe Montel (CGGVeritas)
10:30–10:50 **Salt Emplacement-induced Azimuthal Anisotropy in Garden Banks, Gulf of Mexico**, Hao Shen (CGGVeritas)
10:50–11:10 **TTI Model Building and Imaging in Mississippi Canyon: A Case History**, Zhiqiang Guo (TGS)
11:10–11:40 Discussion
11:40–13 Lunch

Afternoon Session — Full Waveform Inversion 1

13–13:30 **Velocity Model Building via Full Waveform Inversion: Examples and Future Prospect**, Rene-Edouard Plessix (Shell)
13:30–13:50 **VTI Waveform Inversion with Well Constraints**, Chao Wang (ION Geophysical)
13:50–14:10 **Application of FWI to Derive Velocities for Offshore and Onshore Data**, Hongbo Bi (CGGVeritas)
14:10–14:40 Break
14:40–15 **Integrated Application of Tomography and Full Waveform Inversion**, Faqi Liu (Hess Corp)
15–15:20 **How Dual-coil Acquisition Complements Full Waveform Inversion**, Denes Vigh (WesternGeco)
15:20–15:40 **FWI of SEAM Data Benefits from QCing and Constraining the Inversion**, Christof Stork (Landmark)
15:40–16:10 Discussion

Poster Session

16:10–17 Posters
In Quest of Greater Efficiency in Full Waveform Inversion, Fuchun Gao (Total)
Near-surface High-resolution Velocity Model Building Using Full-waveform Inversion: A Case Study from a Quick-clay Landslide Site in Southwest Sweden, Anna Adamczyk (Polish Academy)
Near-surface S-wave Velocity Estimation by Surface Wave Joint Inversion in Multicomponent Seismic Data, Jorge Monsegny (UT-DTH-EOS)
Quantifying Seismic Velocity Model Uncertainty Using Borehole Geophysical Data, Ben Hewett (Shell)
Using Angle Gather Model Building to Improve Subsalt Imaging, Chaoguang Zhou (PGS)

Wednesday, 15 August

Morning Session — Uncertainties

8:30–9 **Between Salt and a “Hard” Place: Application of Linearized Depth Uncertainty Analysis to a Deepwater Gulf of Mexico Subsalt Development**, Cory Hoelting (Chevron)
9–9:20 **Improving Risked Reserves Estimation through Characterization of Anisotropic Velocity Uncertainty**, Jennifer Lewis (Chevron)
9:20–9:40 **Quantifying Seismic Uncertainty Using Geologic and Rock-physics Constraints**, Konstantin Osypov (WesternGeco)
9:40–10:10 Break

Morning Session — Wave Equation MVA 1

10:10–10:30 **Tomographic Full Waveform Inversion by Combining Full Waveform Inversion with Wave-equation Velocity Anaylisis**, Biondo Biondi (Stanford University)
10:30–10:50 **Subsalt Wavefield Tomography with Illumination Compensation**, Paul Sava (Colorado School of Mines)
10:50–11:10 **Integrated Migration Velocity Analysis and Full-waveform Inversion**, Clement Fleury (Colorado School of Mines)
11:10–11:40 Discussion
11:40–13 Lunch on own/Afternoon free

Thursday, 16 August

Morning Session — Ray Based Tomography 2

8:30–9 **Anisotropic Model Building in Complex Media: VTI, TTI, or Orthorhomic**, Olga Zdraveva (WesternGeco)
9–9:20 **Velocity Model Building for Tilted Orthorhombic Depth Imaging**, Yunfeng Li (CGGVeritas)
9:20–9:40 **Migration Velocity Analysis Using Residual Diffraction Moveout in the Pre/Post-stack Depth Domain**, Jorg Schleicher (University of Campinas)
9:40–10:10 Break
10:10–10:30 **Dip Directed Imaging in Complex Geology**, Bee Bednar (Panorama Tech)
10:30–10:50 **Q Tomography Towards True Amplitude Imaging and Improved Sub-karst Imaging**, Yang He (TGS)
10:50–11:10 **Velocity Model Building from Angle Domain Common Image Gatherers**, Jean-Phillippe Montel (CGGVeritas)
11:10–11:40 Discussion
11:40–13 Lunch on own

Afternoon Session — Full Waveform Inversion 2

13–13:30 **Full Waveform Inversion for Detailed Velocity Analysis**, Jerry Kapoor (WesternGeco)
13:30–13:50 **Viscoacoustic vs. Acoustic Waveform Inversion**, Jianyong Bai (ION Geophysical)

Afternoon Session — A Priori Information

13:50–14:10 **Interpretation Driven Modeling (IDM) for Complex Velocity Structures**, Gary Rodriguez (TGS)
14:10–14:40 Break
14:40–15 **Integrated Velocity Model Building through Tomography and Basin Modeling**, Yunqing Shen (ConocoPhillips)
15–15:20 **Constraining Anisotropic Model Building with Preconditioning and Rock Physics**, Marta Woodward (WesternGeco)
15:20–15:40 **Using Rock Physics and Full Elastic Modeling to Seismically Model Complex Lithologies**, John Sinton (Maersk Oil)
15:40 –16:10 Discussion

Poster Session

16:10–17 Posters
An Angle-domain Wave Equation Tomography Approach Using RTM Image Gatherers, Shengwin Jin (Landmark)
Geomechanical Approach to Resolve Severe Velocity Variations and Remove Image Distortions Below Rugose Seafloor, Sergey Birdus (CGGVeritas)
The Study of Multiscale Seismic Data Joint Inversion Method, Hemin Yuan (University of Houston)
Source-Indexed Migration Velocity Analysis with Global Passive Data, Scott Burdick (MIT)

Friday, 17 August

Morning Session–Wave Equation MVA 2

8:30–9 **Novel Wave-equation Migration Velocity Analysis Using Residual Moveout**, Yang Zhang (Stanford University)
9–9:20 **Waveform Tomography Based on Local Image Correlations**, Francesco Perrone (Colorado School of Mines)
9:20–9:40 **Automatic Anisotropic Migration Velocity Analysis for Reverse-time Migration**, Wiktor Waldemar Weibull (Norweigan University of Science and Technology)
9:40–10:10 Break
10:10–10:30 **Migration Semblance**, Sergey Fomel (University of Texas)
10:30–10:50 **Waveform Inversion of Reflection Data Should Depend on Migration and Demigration**, Hongbo Zhou (Statoil)
10:50–11:10 **Exploring Wave Path Tomography in the Angle Domain**, Peter Bakker (Shell)
11:10–11:40 Discussion
11:40 Workshop Adjourns

Organizing Committee

Jacques Leveille, Chairman, Robert Bloor, Gilles Lambaré, Paul Sava
William Symes, Bin Wang, John Washbourne, Paul Williamson

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